

Notice of Allowability

Application No.

10/750,061

Applicant(s)

BRASK ET AL.

Examiner

Walter L. Lindsay, Jr.

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an RCE filed on 2/21/2006.
2. ☒ The allowed claim(s) is/are 19-22 and 26-57.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

This Office Action is in response to the RCE filed on 1/25/2005.

Currently, claims 19-22 and 26-57 are pending.

Allowable Subject Matter

1. Claims 19-22 and 26-57 are allowed.
2. The following is an examiner's statement of reasons for allowance: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:
 - ...forming a gate electrode on said gate dielectric and adjacent to said gate dielectric on said laterally opposite sidewalls of said semiconductor body, wherein said gate electrode comprises a metal film formed directly adjacent to said gate dielectric wherein said gate electrode has a work function between 3.9-4.2 eV; and
 - forming a pair of source/drain regions formed in said semiconductor body on opposite sides of said gate electrode, as required by claim 19;
 - ...blanket depositing a second gate electrode material on said second gate dielectric layer in said second opening on said top surface of said second semiconductor body and adjacent to said second gate dielectric layer on said sidewalls of said semiconductor body, wherein said second gate electrode material comprises a second metal film formed directly on said gate dielectric layer wherein said second metal film is different than said first metal layer, as required by claims 27 and 38;
 - ...forming a gate electrode on said gate dielectric and adjacent to said gate dielectric on said laterally opposite sidewalls of said semiconductor body, wherein said gate electrode has a work function between 4.9-5.2eV; and

forming a pair of source/drain regions formed in said semiconductor body on opposite sides of said gate electrode, as required by claim 43;

...forming a first gate electrode on said first gate dielectric layer wherein said first gate electrode includes a first metal film formed directly on said first gate dielectric layer and wherein said first gate electrode has a work function between 3.9-4.2 eV and forming a second gate electrode on said second gate dielectric layer wherein said second gate electrode has a second metal film formed directly on said second gate dielectric layer and wherein said second gate electrode has a work function between 4.9-5.2 eV; and

forming a first pair of source/drain region in said first semiconductor body on opposite sides of said first gate electrode and forming a second pair of source/drain regions in said second semiconductor body on opposite sides of said second gate electrode, as required by claim 48; and

forming a first gate electrode on said first dielectric layer wherein said first gate electrode includes a first metal film formed directly on said first gate dielectric layer, and forming a second gate electrode on said second gate dielectric layer, wherein said second gate electrode has a second metal film formed directly on said second gate dielectric layer, wherein said second gate electrode has a work function of approximately 1.0 eV or greater than the work function of said first gate electrode, as required by claim 53.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (571) 272-1674. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter L. Lindsay, Jr.
Primary Examiner
Art Unit 2812

WLL

April 19, 2006